CLAIMS

1. (Currently amended) A coupler assembly adapted to provide optical coupling between an optical transceiver of a circuit pack connected to a backplane and an optical pipe of said backplane, the coupler assembly comprising a movable optical element, wherein:

the optical pipe is adapted to transmit optical signals through the backplane; and

the movable optical element is adapted to move so as to accommodate misalignment between the backplane and the circuit pack to provide said optical coupling, wherein:

the movable optical element has a movable mirror adapted to direct light between the optical transceiver and the optical pipe; and

the movable mirror is a part of a MEMS device.

2. (Original) The coupler assembly of claim 1, wherein the movable optical element is adapted to automatically track changes in relative orientation of the backplane and the circuit pack to maintain said optical coupling.

3-4. (Canceled)

5. (Currently amended) The coupler assembly of claim 1 [[3]], wherein the coupler assembly is adapted to dynamically change orientation of the movable mirror to maintain said optical coupling when relative orientation of the backplane and the circuit pack is perturbed.

6. (Currently amended) The coupler assembly of claim 1 [[3]], wherein:

the optical transceiver is adapted to process two or more optical signals;

the optical pipe has two or more waveguides adapted to transmit the two or more optical signals; and

the movable optical element comprises two or more movable mirrors, each mirror adapted to couple an optical signal between the optical transceiver and a corresponding waveguide.

7. (Original) The coupler assembly of claim 1, wherein the movable optical element has a flexible optical fiber adapted to guide light between the optical transceiver and the optical pipe.

8. (Currently amended) The coupler assembly of claim 30 [[7]], wherein said optical fiber has a fiber end having an angled surface adapted to couple light in and out of said optical fiber while changing the light propagation direction.

9. (Original) The coupler assembly of claim 8, wherein the angled surface is oriented at about 45 degrees with respect to a fiber axis.

10. (Currently amended) The coupler assembly of claim 30 [[7]], wherein:

the optical transceiver is adapted to process two or more optical signals;

the optical pipe has two or more waveguides adapted to transmit the two or more optical signals; and

the movable optical element comprises two or more flexible optical fibers, each fiber adapted to guide an optical signal between the optical transceiver and a corresponding waveguide.

11. (Original) The coupler assembly of claim 7, wherein the coupler assembly has first and second heads adapted to move with respect to each other, wherein, when the first head moves with respect to the second head, the flexible optical fiber is bent.

12. (Original) The coupler assembly of claim 11, wherein the first and second heads are connected by a flexure.

13. (Original) The coupler assembly of claim 11, wherein the first head is connected to the backplane and the second head is connected to the optical transceiver.

14. (Currently amended) A system, comprising:

a backplane having an optical pipe adapted to transmit optical signals through the backplane; and

a coupler assembly adapted to optically couple (i) an optical transceiver of a circuit pack coupled to the backplane and (ii) the optical pipe, wherein the coupler assembly has a movable optical element adapted to accommodate misalignment between the backplane and the circuit pack to provide said optical coupling, wherein:

the movable optical element has a movable mirror adapted to direct light between the optical transceiver and the optical pipe; and

the movable mirror is a part of a MEMS device.

15. (Original) The system of claim 14, wherein the movable optical element is adapted to automatically track changes in relative orientation of the backplane and the circuit pack to maintain said optical coupling.

16-17. (Canceled)

18. (Currently amended) The system of claim 14 [[16]], wherein the coupler assembly is adapted to dynamically change orientation of the movable mirror to maintain said optical coupling when relative orientation of the backplane and the circuit pack is perturbed.

19. (Currently amended) The system of claim 14 [[16]], wherein:

the optical transceiver is adapted to process two or more optical signals;

the optical pipe has two or more waveguides adapted to transmit the two or more optical signals; and

the movable optical element comprises two or more movable mirrors, each mirror adapted to couple an optical signal between the optical transceiver and a corresponding waveguide.

20. (Original) The system of claim 14, comprising two or more circuit packs, each connected to the backplane and having an optical transceiver, wherein:

the two or more circuit packs are adapted to exchange optical signals through the optical pipe; and

for each circuit pack, the system has a coupler assembly adapted to optically couple the optical transceiver to the optical pipe.

21. (Original) The system of claim 14, wherein the movable optical element has a flexible optical fiber adapted to guide light between the optical transceiver and the optical pipe.

22. (Currently amended) The system of claim 31 [[21]], wherein said optical fiber has a fiber end having an angled surface adapted to couple light in and out of said optical fiber while changing the light propagation direction.

23. (Original) The system of claim 22, wherein the angled surface is oriented at about 45 degrees with respect to a fiber axis.

24. (Currently amended) The system of claim 31 [[21]], wherein:

the optical transceiver is adapted to process two or more optical signals;

the optical pipe has two or more waveguides adapted to transmit the two or more optical signals; and

the movable optical element comprises two or more flexible optical fibers, each fiber adapted to guide an optical signal between the optical transceiver and a corresponding waveguide.

25. (Original) The system of claim 21, wherein the coupler assembly has first and second heads adapted to move with respect to each other, wherein, when the first head moves with respect to the second head, the flexible optical fiber is bent.

26. (Original) The system of claim 25, wherein the first and second heads are connected by a flexure.

27. (Original) The system of claim 25, wherein the first head is connected to the backplane and the second head is connected the optical transceiver.

28-29. (Canceled)

30. (New) A coupler assembly adapted to provide optical coupling between an optical transceiver of a circuit pack connected to a backplane and an optical pipe of said backplane, the coupler assembly comprising a movable optical element, wherein:

the optical pipe is adapted to transmit optical signals through the backplane;

the movable optical element has a flexible optical fiber adapted to guide light between the optical transceiver and the optical pipe and is adapted to move so as to accommodate misalignment between the backplane and the circuit pack to provide said optical coupling; and

the coupler assembly has first and second heads connected by a flexure and adapted to move with respect to each other, wherein, when the first head moves with respect to the second head, the flexible optical fiber is bent.

31. (New) A system, comprising:

a backplane having an optical pipe adapted to transmit optical signals through the backplane; and

a coupler assembly adapted to optically couple (i) an optical transceiver of a circuit pack coupled to the backplane and (ii) the optical pipe, wherein the coupler assembly has a movable

optical element adapted to accommodate misalignment between the backplane and the circuit pack to provide said optical coupling, wherein:

the movable optical element has a flexible optical fiber adapted to guide light between the optical transceiver and the optical pipe; and

the coupler assembly has first and second heads connected by a flexure and adapted to move with respect to each other, wherein, when the first head moves with respect to the second head, the flexible optical fiber is bent.